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NOTES ON GEOGRAPHIC DISTRIBUTION

Zammara smaragdula Walker, 1858 (Hemiptera: Cicadidae): First record for Brazil

Douglas Henrique Bottura Maccagnan [1*], Nilza Maria Martinelli [2], Geert Goemans [3] and Edson Guilherme [4]

1 Universidade Estadual de Goiás, Unidade Universitária de Iporá. Avenida R-2, Q. 1, CEP 76200-000, Iporá, GO, Brasil.
2 Universidade Estadual Paulista, Faculdade de Ciências Agrárias e Veterinárias, Departamento de Fitossanidade. Via de Acesso Prof. Paulo Donato Castellane, s/n, CEP 14884-900, Jaboticabal, SP, Brasil.
3 University of Connecticut. 75 North Eagleville Road, Unit 3043, Storrs CT 06269, U.S.A.
4 Universidade Federal do Acre. Departamento de Ciências da Natureza, BR-364, km 04, Campus. CEP 69915-900, Rio Branco, AC, Brasil.
* Corresponding author. E-mail: *douglashbm@hotmail.com*

ABSTRACT: The present note reports the first record for Brazil of the cicada *Zammara smaragdula* Walker, 1858 (Hemiptera, Cicadidae, Zammarini). This new record brings the number of reported Cicadidae species for Brazil to 153, including three species in the genus *Zammara*.

Cicadas (Hemiptera: Cicadoidea) are generally large insects that are distinguished by the sound they emit. There are currently 152 species reported from Brazil (Sanborn 2008; Santos and Martinelli 2009a, b; Santos *et al.* 2010). But, because of the limited number of studies on the Brazilian fauna due to very limited collecting and the small number of professionals working on this group, this number is certainly underestimated.

The tribe Zammarini was first described by Distant (1905) as the Division Zammararia, characterized by their expanded pronotal margins, usually angulated medially. Zammarini have a distribution restricted to tropical and subtropical regions of the Americas. The genus *Zammara* Amyot and Audinet Serville, 1843 is currently composed of 15 species (Goemans 2010), and of these, only the species *Zammara strepens* Amyot and Audinet Serville, 1843 and *Zammara tympanum* (Fabricius, 1803) are recorded as occurring in Brazil (Metcalf 1963; Duffels and van der Laan 1985).

A male specimen of *Zammara smaragdula* Walker, 1858 (Figure 1) was collected on 18-II-2010 in gallery forest at the mouth of the river Jurupari, Acre state, Brazil, (7°51'32" S, 70°51'10" W). The collected specimen was deposited in the Entomology Collection at the Phytosanitation Department of the Faculdade de Ciências Agrárias e Veterinárias of the UNESP (FCAV/UNESP), Jaboticabal, São Paulo, Brazil.

When alive, *Z. smaragdula* has an iridescent blue-green color and can be easily diagnosed by the pattern of spots on their forewings. Initially, this species was reported only for South America (Walker 1858), without providing any specific location, neither does the type specimen have any location data. Currently this species is known to occur in Mexico (Sanborn 2006a; 2007), Guatemala (Sanborn 2006b) and Colombia (Sanborn 2010). Bartholomew and Barnhart (1984) carried out physiological studies with *Z. smaragdula* in Panama. However, this species is not listed for this country in the list provided by Wolda and Ramos (1992). Young (1972; 1973) attributes ecological notes for *Z. smaragdula* in Costa Rica, but the pictures presented by the author are not consistent with this species. Probably the correct species is *Z. smaragdina* Walker, 1850. However, in later publications, as indicated by the pictures presented,

FIGURE 1. Male of *Zammara smaragdula* from the state of Acre, Brazil. Scale 1cm.

the author starts to correctly determine both species, thus providing the true ecological notes for *Z. smaragdula* from Costa Rica (Young 1980a, b, c, d; 1981a, b). Since the records of occurrence for *Z. smaragdula* did not include Brazil, the collection herein reported represents a new record for the country.

Literature Cited

Bartholomew, G.A. and M.C. Barnhart. 1984. Tracheal gases, respiratory gas exchange, body temperature and flight in some tropical cicadas. *Journal of Experimental Biology* 111: 131-144.

Distant, W.L. 1905. Rhynchotal notes XXXI. *Annals and Magazine of Natural History* 15(7): 379-387.

Duffels, J.P. and P.A. van der Laan. 1985. *Catalogue of the Cicadoidea (Homoptera, Auchenorrhyncha) 1956–1980*. Dordrecht: Dr. W. Junk Publishers. 414 p. (Series Entomologica; 34).

Goemans, G. 2010. A historical overview of the classification of the Neotropical tribe Zammarini (Hemiptera, Cicadidae) with a key to genera. *ZooKeys* 43: 1-13.

Metcalf, Z.P. 1963. *General catalogue of the Homoptera, fascicle VIII. Cicadoidea. Part 1. Cicadidae*. Raleigh: Waverly Press. 919 p.

Sanborn, A.F. 2006a. New records of cicadas from Mexico (Hemiptera: Cicadoidea: Cicadidae). *The Southwestern Naturalist* 51(2): 255 – 257.

Sanborn, A.F. 2006b. New records for the cicada fauna from four Central American countries (Hemiptera: Cicadoidea: Cicadidae). *Florida Entomologist* 89(1): 75 – 79.

Sanborn, A.F. 2007. New species, new records and checklist of cicadas from Mexico (Hemiptera: Cicadomorpha: Cicadidae). *Zootaxa* 1651: 1-42.

Sanborn, A.F. 2008. New Records of Brazilian Cicadas Including the Description of a New Species (Hemiptera: Cicadoidea, Cicadidae). *Neotropical Entomology* 37(6): 685-690.

Sanborn, A.F. 2010. The cicadas of Colombia including new records and the description of a new species (Hemiptera: Cicadidae). *Journal of Natural History* 44(25): 1577 – 1607.

Santos, R.S. and N.M. Martinelli 2009a. Primeiro registro de *Fidicinoides picea* (Walker, 1850) e *Fidicinoides poulaini* Boulard & Martinelli, 1996 no Brasil. *Ciência Rural* 39(2): 559-562.

Santos, R.S. and N.M. Martinelli 2009b. Descrição de novas espécies de *Fidicinoides* Boulard and Martinelli, 1996 (Hemiptera: Cicadidae) de ocorrência no Brasil. *Neotropical Entomology* 38(5): 638-642.

Santos, R.S., N.M. Martinelli, D.H.B. Maccagnan, R. Ribeiro and A.F. Sanborn. 2010. Description of new cicada species associated with the coffee plant and an identification key for the species of *Fidicinoides* (Hemiptera: Cicadidae) from Brazil. *Zootaxa* 2602: 48–56.

Walker, F. 1858. *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders. Homoptera*. London: John Van Voorst. 117 p.

Wolda, H. and J.A. Ramos. 1992. Cicadas in Panama: Their distribution, seasonality, and diversity (Homoptera: Cicadidae); p. 271-279 *In* D. Quintero and A. Aiello (ed). *Insects of Panama and Mesoamerica: Selected Studies*. New York: Oxford University Press.

Young, A.M. 1972. Cicada ecology in a Costa Rican tropical rain forest. *Biotropica* 4(3): 152-159.

Young, A.M. 1973. Cicada populations on palms in tropical rain forest. *Principes* 17(1): 3-9.

Young, A.M. 1980a. Habitat and seasonal relationships of some cicadas (Homoptera: Cicadidae) in central Costa Rica. *The American Midland Naturalist* 103(1): 155-166.

Young, A.M. 1980b. Environmental partitioning in lowland tropical rain forest cicadas. *New York Entomological Society* 88(2): 86-101.

Young, A.M. 1980c. Observations on the aggregation of adult cicadas (Homoptera: Cicadidae) in tropical forests. *Canadian Journal of Zoology* 58(5): 711-722.

Young, A.M. 1980d. Seasonal adult emergences of cicadas (Homoptera: Cicadidae) in Northwestern Costa Rica. *Milwaukee Public Museum Contributions in Biology and Geology* 40: 1-29.

Young, A.M. 1981a. Notes on seasonality and habitat associations of tropical cicadas (Homoptera: Cicadiae) in premontane and montane moist forest in Costa Rica. *New York Entomological Society* 89(2): 123-142.

Young, A.M. 1981b. Notes on the population ecology of cicadas (Homoptera: Cicadidae) in the Cuesta Angel forest ravine of Northeastern Costa Rica. *Psyche* 88(1-2): 175-195.

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